A Spacebased Ocean Surface Exchange Data Analysis System

Wenqing Tang and W. Timothy Liu
Jet Propulsion Laboratory, MS 300/323
Pasadena, CA 91109
wqt@pacific.jpl.nasa.gov

Emerging technologies have provided unprecedented opportunities to transform information into knowledge and disseminate them in a much faster, cheaper, and user-friendly mode.

We have set up a system to produce and disseminate high level (gridded) ocean surface wind data from the NASA Scatterometer and European Remote Sensing missions. The data system is being expanded to produce real-time gridded ocean surface winds from an improved sensor SeaWinds on the Quikscat Mission. The wind field will be combined with hydrologic parameters from the Tropical Rain Measuring Mission to monitor evolving weather systems and natural hazard in real time. It will form the basis for spacebased Ocean Surface Exchange Data Analysis System (SOSEDAS) which will include the production of ocean surface momentum, heat, and water fluxes needed for interdisciplinary studies of ocean-atmosphere interaction.

Various commercial or non-commercial software tools have been compared and selected in terms of their ability in database management, remote data accessing, graphical interface, data quality, storage needs and transfer speed, etc. Issues regarding system security and user authentication, distributed data archiving and accessing, strategy to compress large-volume geophysical and satellite data/image. and increasing transferring speed are being addressed. A simple and easy way to access information and derive knowledge from spacebased data of multiple missions is being provided.

The evolving 'knowledge system' will provide relevant infrastructure to address Earth System Science, make inroads in educating an informed populace, and illuminate decision and policy making.